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<b>CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)</b>				Docket No. <b>1414-SPL RCE</b>	
Applicant(s): <b>John C. Murphy</b>					
Application No. <b>09/813,767</b>	Filing Date <b>AUG 24 2004 3/21/01</b>	EXAMINER'S STAMP <b>PTENT &amp; TRADEMARK OFFICE</b>	Examiner <b>Aurora, Reena</b>	Customer No. <b>26085</b>	Group Art Unit <b>2862</b>
<b>Invention: APPARATUS AND METHODS USING MECHANICAL RESONATORS TO ENHANCE SENSITIVITY IN LORENTZ FORCE MAGNETOMETERS</b>					
<p>I hereby certify that this <b>Transmittal of New Drawings</b>  <small>(Identify type of correspondence)</small></p> <p>is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on  <u>August 23, 2004</u>  <small>(Date)</small></p> <p style="text-align: right;"><b>Beth A. Hicks</b>  <small>(Typed or Printed Name of Person Mailing Correspondence)</small></p> <p style="text-align: right;"><i>Beth A. Hicks</i>  <small>(Signature of Person Mailing Correspondence)</small></p>					
<p><b>Note: Each paper must have its own certificate of mailing.</b></p> <div style="border: 1px solid black; width: 100%; height: 150px; margin-top: 10px;"></div>					



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

JHU/APL Docket No. 1414-SPL RCE

**Notice of allowance dated 7/22/04  
Confirmation Number: 2415**

Serial No.: 09/813,767

Filed: 3/21/01

Group Art Unit 2862  
Examiner: Aurora, Reena

Inventors: John C. Murphy

For: APPARATUS AND METHODS USING MECHANICAL RESONATORS TO  
ENHANCE SENSITIVITY IN LORENTZ FORCE MAGNETOMETERS

TRANSMITTAL OF NEW DRAWINGS TO  
THE OFFICIAL DRAFTSMAN

Mail Stop Issue Fee  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 2313-1450

Sir/Madam:

Enclosed please find new formal drawings incorporating changes required by the Examiner (see enclosed Notice of Allowability and Form PTO 948). The Notice of Allowance is also enclosed.

Please substitute the enclosed two (2) sheets of drawings for the two (2) sheets of the originally filed informal drawings.

Respectfully submitted,

A handwritten signature in black ink that appears to read "Francis A. Cooch".

Francis A. Cooch  
Registration No. 31,495  
Attorney for Applicants

Date August 19, 2004

FAC/bah  
Enclosures  
(240) 228-5640

NOTICE OF DRAFTSPERSON'S  
PATENT DRAWING REVIEWThe drawing(s) filed (insert date) 3/21/01 are:

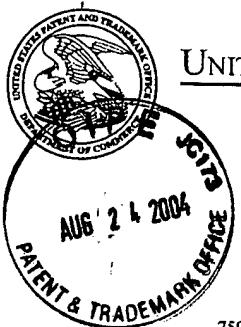
- A.  approved by the Draftsperson under 37 CFR 1.84 or 1.152.  
B.  objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawing must be submitted according to the instructions on the back of this notice.

1. DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color. <input type="checkbox"/> Color drawings are not acceptable until petition is granted. Fig(s) _____	8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i) <input type="checkbox"/> Words do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) _____
2. PHOTOGRAPHS. 37 CFR 1.84(b) <input type="checkbox"/> 1 full-tone set is required. Fig(s) _____ <input type="checkbox"/> Photographs may not be mounted. 37 CFR 1.84(c) <input type="checkbox"/> Poor quality (half-tone). Fig(s) _____	9. SCALE. 37 CFR 1.84(k) <input type="checkbox"/> Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction. Fig(s) _____
3. TYPE OF PAPER. 37 CFR 1.84(e) <input type="checkbox"/> Paper not flexible, strong, white, and durable. Fig(s) _____ <input type="checkbox"/> Erasures, alterations, overwritings, interlineations, folds, copy machine marks not accepted. Fig(s) _____ <input type="checkbox"/> Mylar, velum paper is not acceptable (too thin). Fig(s) _____	10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(l) <input type="checkbox"/> Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality). Fig(s) <u>4</u>
4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable sizes: <input type="checkbox"/> 21.0 cm by 29.7 cm (DIN size A4) <input type="checkbox"/> 21.6 cm by 27.9 cm (8 1/2 x 11 inches) <input type="checkbox"/> All drawing sheets not the same size. Sheet(s) _____ <input type="checkbox"/> Drawings sheets not an acceptable size. Fig(s) _____	11. SHADING. 37 CFR 1.84(m) <input type="checkbox"/> Solid black areas pale. Fig(s) _____ <input type="checkbox"/> Solid black shading not permitted. Fig(s) _____ <input type="checkbox"/> Shade lines, pale, rough and blurred. Fig(s) _____
5. MARGINS. 37 CFR 1.84(g): Acceptable margins: Top 2.5 cm Left 2.5cm Right 1.5 cm Bottom 1.0 cm SIZE: A4 Size Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm SIZE: 8 1/2 x 11 Margins not acceptable. Fig(s) _____ <input type="checkbox"/> Top (T) _____ Left (L) _____ <input type="checkbox"/> Right (R) _____ Bottom (B) _____	12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR 1.84(p) <input type="checkbox"/> Numbers and reference characters not plain and legible. Fig(s) <u>1-4</u> <input type="checkbox"/> Figure legends are poor. Fig(s) _____ <input type="checkbox"/> Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1) Fig(s) _____ <input type="checkbox"/> English alphabet not used. 37 CFR 1.84(p)(2) Figs _____ <input type="checkbox"/> Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3) Fig(s) _____
6. VIEWS. 37 CFR 1.84(h) REMINDER: Specification may require revision to correspond to drawing changes. Partial views. 37 CFR 1.84(h)(2) <input type="checkbox"/> Brackets needed to show figure as one entity. Fig(s) _____ <input type="checkbox"/> Views not labeled separately or properly. Fig(s) _____ <input type="checkbox"/> Enlarged view not labeled separately or properly. Fig(s) _____	13. LEAD LINES. 37 CFR 1.84(q) <input type="checkbox"/> Lead lines cross each other. Fig(s) _____ <input type="checkbox"/> Lead lines missing. Fig(s) _____
7. SECTIONAL VIEWS. 37 CFR 1.84(h)(3) <input type="checkbox"/> Hatching not indicated for sectional portions of an object. Fig(s) _____ <input type="checkbox"/> Sectional designation should be noted with Arabic or Roman numbers. Fig(s) _____	14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(i) <input type="checkbox"/> Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s) _____
15. NUMBERING OF VIEWS. 37 CFR 1.84(u) <input type="checkbox"/> Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) _____	16. CORRECTIONS. 37 CFR 1.84(w) <input type="checkbox"/> Corrections not made from prior PTO-948 dated _____
17. DESIGN DRAWINGS. 37 CFR 1.152 <input type="checkbox"/> Surface shading shown not appropriate. Fig(s) _____ <input type="checkbox"/> Solid black shading not used for color contrast. Fig(s) _____	

COMMENTS

REVIEWER 7DATE 6/25/02TELEPHONE NO. 308-2011ATTACHMENT TO PAPER NO.           

BEST AVAILABLE COPY



UNITED STATES PATENT AND TRADEMARK OFFICE

AUG 24 2004  
24104  
Aurora REENA

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

07/22/2004

Francis A. Cooch, Office of Patent Counsel  
The Johns Hopkins University  
Applied Physics Laboratory  
11100 Johns Hopkins Road  
Laurel, MD 20723-6099

RECEIVED  
U.S. PATENT & TRADEMARK OFFICE

JUL 27 2004  
FAC  
7/28/04

PATENT  
COUNSEL

EXAMINER

AURORA, REENA

ART UNIT

PAPER NUMBER

2862

DATE MAILED: 07/22/2004

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/813,767	03/21/2001	John C. Murphy	1414-SPL	2415

TITLE OF INVENTION: APPARATUS AND METHODS USING MECHANICAL RESONATORS TO ENHANCE SENSITIVITY IN LORENTZ FORCE MAGNETOMETERS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$665	\$300	\$965	10/22/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

### HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.



## Notice of Allowability

Application No.	Applicant(s)
09/813,767	MURPHY, JOHN C.
Examiner	Art Unit
Reena Aurora	2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTO-85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1.  This communication is responsive to amendment received on 05/12/04.
2.  The allowed claim(s) is/are 6, 10, 12 - 18, 24 and 26 - 27.
3.  The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All
  - b)  Some\*
  - c)  None
  1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached  
1)  hereto or 2)  to Paper No./Mail Date 07/10/02.
  - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of  
Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1.  Notice of References Cited (PTO-892)
2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4.  Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5.  Notice of Informal Patent Application (PTO-152)
6.  Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7.  Examiner's Amendment/Comment
8.  Examiner's Statement of Reasons for Allowance
9.  Other \_\_\_\_\_

*Anjan Deb*  
ANJAN DEB  
PRIMARY EXAMINER